

GENERIC · POWERTRAIN

P0B2D

OBD-II DIAGNOSTIC TROUBLE CODE (DTC)

P0B2D

Hybrid/EV Battery C Voltage Low

P0B2D indicates that the hybrid or electric vehicle battery control module has detected an abnormally low voltage on the circuit dedicated to monitoring cell group C of the high-voltage battery pack. The computer compares this cell group's voltage against the others and flags the code when the reading falls below the expected threshold, which can indicate a weak cell, a faulty sensing circuit, or a communication problem within the battery management system.

SYSTEM	CODE TYPE	SEVERITY	FIX DIFFICULTY	AREA
Powertrain	Generic (all makes)	High	Professional	Hybrid propulsion

Symptoms you may notice

- Illumination of the hybrid system warning light or service vehicle soon message on the dashboard
- Reduced electric-only range or the vehicle refusing to enter EV mode
- A noticeable drop in acceleration or power output as the system limits current to protect the battery
- The internal combustion engine starting more frequently or running continuously in a hybrid
- In some cases, no symptoms besides the warning light, especially if the voltage deviation is minor
- Intermittent warning light that appears under load or during charging and clears when the vehicle rests

Common causes, most likely first

- 1 A weak or failing cell group within the high-voltage battery pack, causing its voltage to sag under load
- 2 Corroded, loose, or damaged voltage sensing wiring or connector pins at the cell group C tap
- 3 A faulty cell voltage sensor module or battery management system (BMS) circuit board
- 4 Poor communication between the BMS and the hybrid control module due to a damaged CAN bus wire or connector
- 5 Extreme temperature exposure that temporarily depresses cell voltage, such as a very cold soak
- 6 A battery pack that has been deeply discharged or stored at low state of charge for an extended period
- 7 Rarely, a software calibration issue in the BMS that misinterprets a normal voltage reading



How to diagnose and fix it

- 1 Use a scan tool to retrieve all hybrid battery data and record the voltage of every cell group to confirm that group C is genuinely lower than the rest
- 2 Inspect the cell group C sensing harness and connector for corrosion, loose pins, or chafed wires, and repair as needed
- 3 Perform a battery pack load test or capacity check according to the manufacturer's procedure to verify cell group health
- 4 Check for and install any available BMS software updates that address voltage sensing accuracy
- 5 If a sensor module is suspect, swap it with a known-good unit from another cell group and recheck the voltage reading
- 6 If cell group C is confirmed weak, replace the affected battery module or the entire pack as required by the manufacturer's guidelines
- 7 Clear the code and perform a full drive cycle, including charging and discharging, to verify the repair and ensure the code does not return

Before condemning the hybrid battery pack

- A low voltage reading on one cell group often traces to a bad sensing wire or connector rather than the cells themselves, so always inspect the harness before pricing a pack.
- Cold weather can temporarily depress cell voltage and set this code, so a vehicle that sat in freezing temperatures may need only a warm-up and a recharge before diagnosis.
- The BMS may set P0B2D as a companion code when another module on the same communication bus is faulty, so check for unrelated codes that could be disrupting data.
- After replacing a sensor or module, some vehicles require a battery pack learn or calibration procedure; skipping it can cause the code to reappear immediately.
- A pack that is merely out of balance from repeated shallow charging may recover with a slow, full charge and a balance cycle, so avoid condemning it on the first scan.

Can I keep driving with P0B2D?

This code should be treated as a high-priority fault because a weak cell group can lead to reduced power, unexpected shutdown of the hybrid system, or further battery damage. Limit driving to a short distance to a qualified repair facility, avoid heavy acceleration or high-speed driving, and do not attempt to charge the vehicle if the warning light is accompanied by a charging system error.



Tools that help

- Hybrid-capable OBD-II scan tool with live battery cell voltage data
- Digital multimeter with CAT III rating for high-voltage safe measurements
- Insulated hand tools and personal protective equipment rated for high-voltage work
- Manufacturer service information for battery pack disassembly and torque specifications
- Battery pack load tester or capacity checker
- Wire terminal pick and contact cleaner for harness inspection

Reading P0B2D

P	Powertrain: engine, transmission and emissions.
0	Generic (SAE) code: it means the same thing on every OBD-II vehicle.
B	Hybrid propulsion.
2D	The exact fault within that area.

Often seen with

P0A7F Hybrid/EV Battery Pack Deterioration · **P0AFA** Hybrid/EV Battery System Voltage Low · **P0B2C** Hybrid/EV Battery C Voltage Unstable · **P0B2E** Hybrid/EV Battery C Voltage High · **P0B2F** Hybrid/EV Battery D Voltage

See it working

Watch the animated explainer [How Regenerative Braking Works in Electric Cars](#) on Auto Veteran to see the parts involved moving.

Full guide, related articles and animations: <https://www.autoveteran.tech/dtc-codes/p0b2d/>

